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United States
Department of
Agriculture

**Forest Service**

**Washington, DC**
FS-530

## Fiscal Year 1991–Highlights

# Report of the Forest Service

## Centennial Celebration
## 100 Years of Conservation 1891-1991

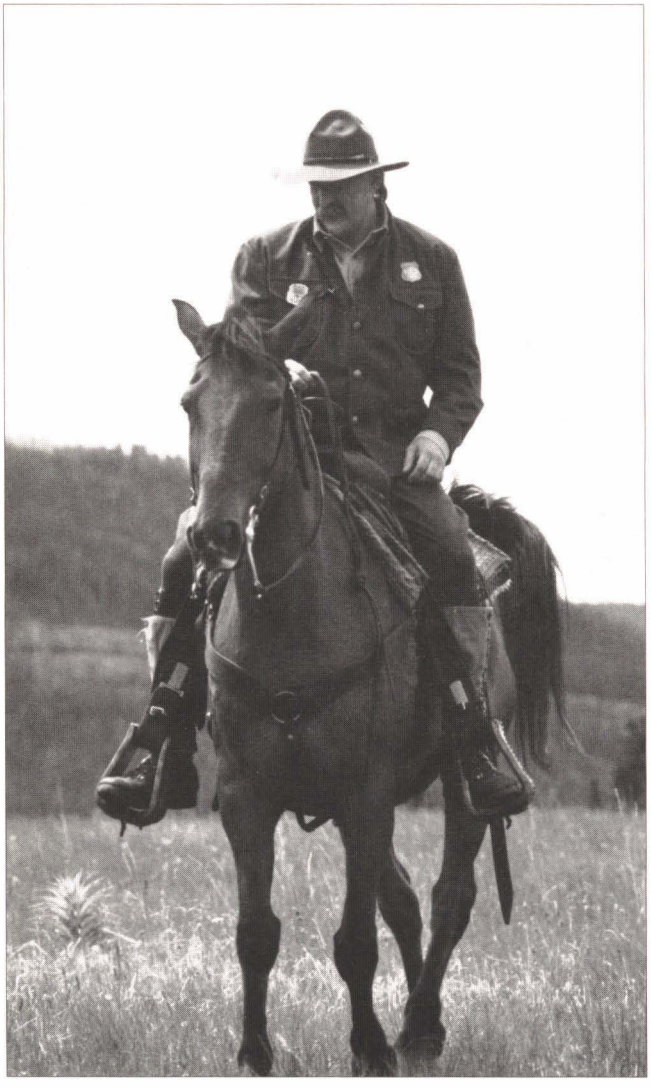


Photo by Jill Bauermeister

### RESOURCES PLANNING ACT

The long-term strategic direction of the Forest Service is spelled out in the Secretary of Agriculture's Forest Service program for "Forest and Rangeland Resources: A Long-Term Strategic Plan" (RPA Program), which was published in 1990.

The Strategic Plan of the Forest Service is an organizational reaffirmation of multiple-use management for our Nation's forests and grasslands. It is a multiple-use approach that improves balance among the resources, protects long-term ecosystem sustainability, and is attentive to the unique resource potential of different land units. Carrying out this strategy is a culturally and professionally diverse work force that is responsive to the American people, whom they serve. The Forest Service is using its Strategic Plan as a pathway to the future.

The Strategic Plan of the Forest Service was, in part, based on an extensive scientific assessment of the resource situations associated with all forest and rangelands, published in 1989. The assessment results showed increasing demands for both amenity and commodity outputs from natural resources. As a result, the challenge is to meet these demands, while simultaneously managing the resource base to protect environmental quality.

Four major themes characterize the plan and the strategic direction of the Forest Service:

- Recreation, wildlife, and fisheries resource enhancement.
- Environmentally acceptable commodity production.
- Improved scientific knowledge about natural resources.
- Responding to global resource issues.

These themes are consistent with the multiple-use charge of the Strategic Plan and reflect recent developments in scientific information and public values.

## NATIONAL FOREST SYSTEM

In FY 1991, the Forest Service, the forestry profession, conservationists, the forest products industry, and the Nation celebrated the 100th anniversary of the establishment of the National Forest System. There are now 156 national forests, 20 national grasslands, and 71 experimental forests in the 191-million-acre National Forest System.

### Centennial Celebration

To commemorate the centennial, Congress declared June 1991 as National Forest Month. District, station, forest, and regional offices, as well as the Washington Office, decorated their offices for the year and invited the public to visit during National Forest Month. Local offices sponsored special events—reunions, parades, dedications, and special community presentations. Celebration events included a national poster art contest, a national history conference, a rededication ceremony of the first Forest Reserve, and a national futures conference on land ethics, stewardship, and leadership.

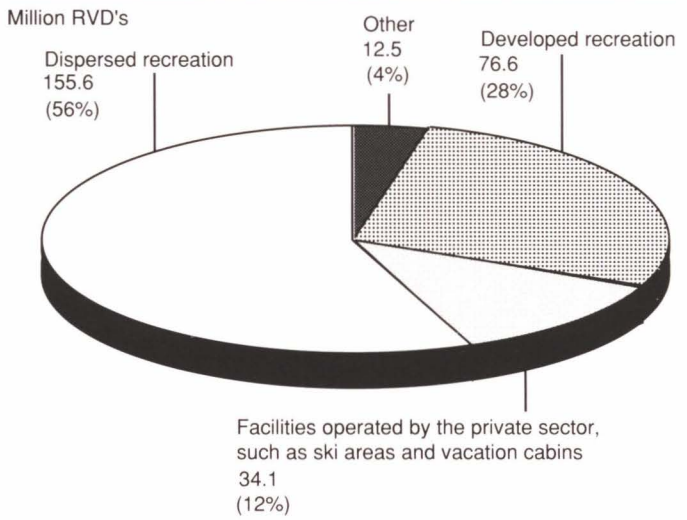
### Forest Planning

The National Forest Management Act of 1976 (NFMA) required the Forest Service to develop forest plans for each administrative unit of the National Forest System. As of October 1, 1991, 115 forest plans were completed and are guiding management of those national forests.

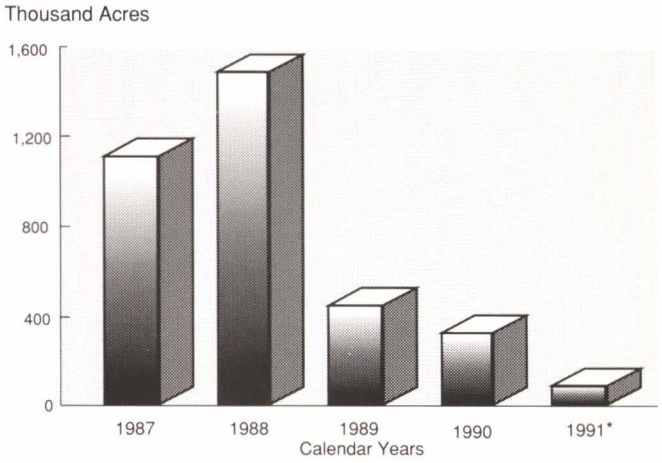
### Recreation

The National Forest System offers a wide spectrum of recreation—from wilderness to urban experiences, from organized activities to individual hunting and fishing trips, from guided auto tours to white water rafting, and from bird watching to volunteering on archaeological projects. In FY 1991, visitors spent 279 million recreation visitor days on the National Forest System.

**FY 1991 Recreation Visitor Days by Activity**




**Acres Burned by Wildfire on the National Forest System**




| | 1987 | 1988 | 1989 | 1990 | 1991* |
|---|---|---|---|---|---|
| Acres Burned | 1,163 | 1,550 | 476 | 346 | 98* |
| Number of Fires | 13,262 | 12,750 | 11,953 | 11,950 | 9,723* |

* Preliminary figure

### Wildfires on the National Forest System

The National Forest System is protected against wildfire with programs in fire prevention, fire presuppression, fire suppression, and fuels management. In FY 1991, Forest Service firefighting resources fought 9,723 fires on the National Forest System and provided firefighting assistance to other Federal and State organizations through interagency agreements.

As the FY 1991 fire season progressed, predictions indicated worse than average drought weather conditions. In response, the Chief of the Forest Service authorized $32 million in severity funds to allow the hiring of additional crews, aircraft, and other fire suppression resources. While the total number of fires varied little from recent years, a significant reduction in burned acres was achieved, due in large measure to effective use of severity funding and strategic preparedness actions.

### Wildlife and Fish

The National Forest System provides diverse habitats for 3,000 species of birds and animals, and more than 2,000 rare plant species. Included are 213 plant and animal species listed as either threatened or endangered by the U.S. Fish and Wildlife Service.

### Rangeland

The Forest Service administers livestock grazing permits on over 99 million acres of rangeland in 33 States. In addition, healthy rangelands provide quality wildlife habitat, stable soils, and clean water, both inside and outside of grazing allotments. In FY 1991, the Forest Service administered 10,000 paid permits for 9.5 million animal unit months of grazing by domestic cattle, horses, sheep, and goats.

## RESEARCH

The Forest Service has the most extensive integrated forestry research program in the world. The program is designed to enhance the environmental quality of America's 1.6 billion acres of forests and associated rangelands, while improving resource conservation, productivity, and protection, as well as increasing the overall effectiveness of forest management.

### Threatened, Endangered, and Sensitive Species

The Forest Service Research program mission for threatened, endangered, and sensitive species is to recover threatened and endangered species, and to forestall population declines that would require the Federal listing of species that are now considered sensitive. Major accomplishments for FY 1991 include discovery of the major causes of cavity-tree mortality in red-cockaded woodpecker nesting colonies, and development of a model to predict population trends for the Kirtland's warbler.

### Old-Growth

Over one-quarter of the forested lands managed by the Forest Service in Washington, Oregon, and northern California can be classified as old-growth. In 1983, the Forest Service initiated a series of studies on the vegetation and wildlife of old-growth Douglas-fir forests. The results have been compiled into an important new book titled "Wildlife and Vegetation of Unmanaged Douglas-fir Forests."

### Gypsy Moth

The gypsy moth, *Lymantria dispar*, continues to be a serious insect pest of hardwood forests in the East. Compared to most chemical and biological agents used for gypsy moth control, a virus, coded LdNPV, has the advantage of causing no adverse environmental harm. However, LdNPV is not competitive in cost or performance. A genetic variant of LdNPV was engineered to contain a gene from a common bacterium found in human waste, *E. coli* (the beta-galactosidase gene). This foreign "marker" gene is needed to construct viral strains with enhanced gypsy moth control properties and to develop optimum ways to create new LdNPV strains.

### Bark Beetles

Bark beetles throughout the West are killing millions of trees weakened by drought and other factors. Few options exist for responding to these situations other than salvage harvesting of dead timber. Bark beetles primarily use two types of pheromones to communicate with each other: aggregation and antiaggregation pheromones. Aggregation pheromones attract large numbers of beetles to an individual tree. Antiaggregation pheromones signal other beetles that the trees are already infested, causing them to go elsewhere. Researchers, in cooperation with private industry, demonstrated for the first time that damage caused by mountain pine beetle can be managed by the aerial application of pheromones.

### Toxic Waste Cleanup

Environmental concern over the penetration of toxic chemicals into the soil and ground water has highlighted the need for better technology to clean up sites contaminated with toxic chemicals. A Forest Service research study demonstrated the feasibility of using two species of white-rot fungi to reduce the soil concentration of polychlorinated biphenyl (PCP) by about 90 percent.

### Biomechanical Pulping

Scientists at the Forest Products Laboratory are exploring a new approach to wood pulping—biomechanical pulping—in which wood chips are softened with white-rot wood-decay fungi. Many of the experimental treatments have shown great potential for substantial energy savings in this new process.

### Reducing Landfill Waste

Development of a technology that reduces landfill waste by producing products from solid waste is a high-priority research issue. Forest Service research has utilized landfill waste to produce wood/noncomposites. Raw paper materials were mixed with polyester or polypropylene and formed into a continuous, low-density mat of intertwined fibers. The low-density mat is the fibrous matrix which is melt-blended with phenolic resins to produce panels for interior car doors, truck liners, piano soundboards, and sheathing materials.

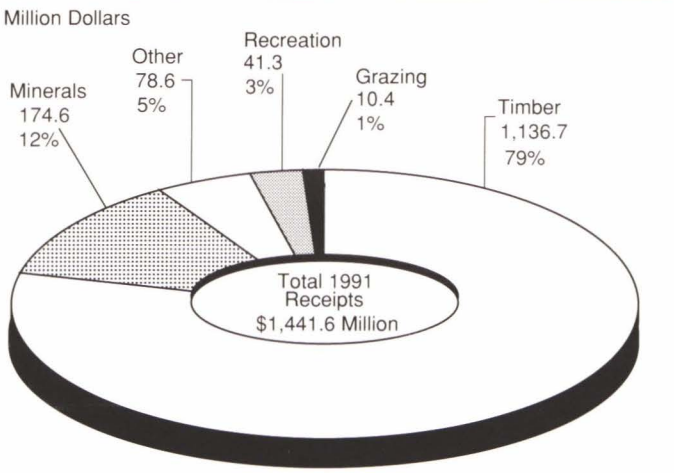
## ADMINISTRATION

The Forest Service's permanent work force increased by 1,080 over the past year, and now totals 34,861. Over FY 1991, the number of women increased, now comprising 39 percent of the work force. The number of minority employees increased, now representing 15 percent of the work force.

### Receipts and Expenditures

In FY 1991, the Forest Service produced 42 cents of revenue for every dollar expended. Total receipts were $1.44 billion, and total expenditures were $3.42 billion.

**Forest Service Receipts by Program**



### Pacific Yew—A Source of the Anti-Cancer Drug Taxol

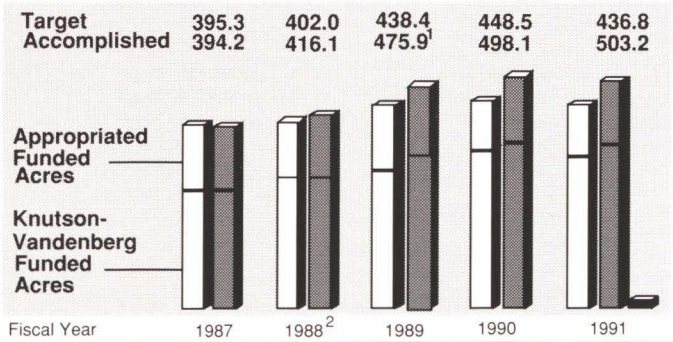
Taxol, a chemical extracted from Pacific yew, *Taxus brevifolia*, is an extremely effective anti-cancer drug. It is expected to be a major cancer-treating chemical. This will require a large and steady supply of the raw material—Pacific yew bark. Following the signing of a Cooperative Research and Development Agreement by the National Cancer Institute (NCI) and Bristol-Myers Squibb Company (BMS), the Forest Service and BMS developed a cooperative agreement that provides the framework for ensuring that the Pacific yew resource is used effectively. In FY 1991, in order to meet the NCI's urgent need, approximately 825,770 pounds of dry Pacific yew bark were collected from the National Forest System in Oregon, Washington, Montana, and Idaho.

### Reforestation

In FY 1991, the Forest Service reforested 503,000 acres, with over 50 different species of trees. Forest Service reforestation accomplishments continue on a record high level in recognition of the need to rehabilitate the large amount of acres that were devastated by the severe fires from 1987 to 1989 to meet the program objectives outlined in the 1990 RPA Program. Ten Forest Service tree nurseries produced 135.0 million seedlings—130.8 million bareroot and 4.2 million container seedlings—for reforestation.

**Reforestation**

**Total Acres (Thousands)**



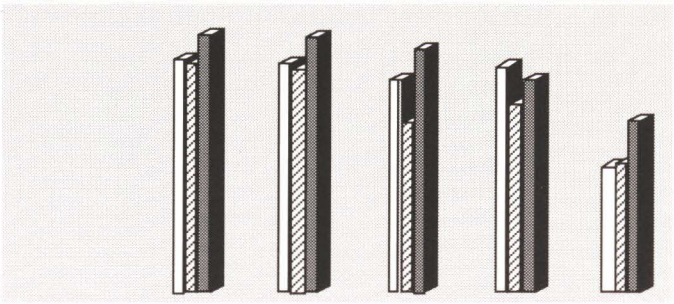

| Fiscal Year | 1987 | 1988[2] | 1989 | 1990 | 1991 |
|---|---|---|---|---|---|
| | | (Thousand Acres) | | | |
| Target | | | | | |
| Appropriated | 139.7 | 119.0 | 142.1 | 109.9 | 114.0 |
| K-V | 255.6 | 283.0 | 296.3 | 338.6 | 322.8 |
| Accomplished | | | | | |
| Appropriated | 139.4 | 133.3 | 148.6 | 145.0 | 138.2 |
| K-V | 254.8 | 282.8 | 327.3 | 353.1 | 350.5 |
| Contributed | | | | | 14.5[3] |

[1] An additional 16,350 acres were reforested with contributed funds and were included in table 13.
[2] Does not include 36,800 acres of natural regeneration without site preparation.
[3] Acres reforested with funds contributed from outside sources.

### Timber Sales

The National Forest System contains 47 percent of the Nation's standing softwood sawtimber inventory. However, of the Nation's softwood sawtimber volume used for lumber in FY 1991, the National Forest System contributed approximately 19 percent.

**Timber Offered, Sold, and Harvested**



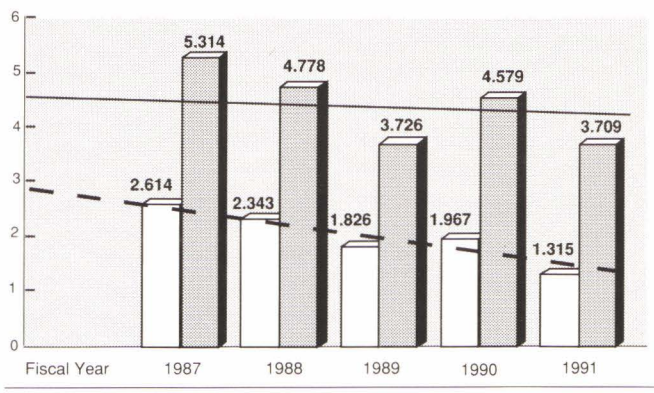
| Fiscal Year | 1987 | 1988 | 1989 | 1990 | 1991 |
|---|---|---|---|---|---|
| | | | (Billion Board Feet) | | |
| Offered | 11.5 | 11.3 | 10.5 | 11.1 | 6.2 |
| Sold | 11.3 | 11.0 | 8.4[1] | 9.3 | 6.4[2] |
| Harvested | 12.7 | 12.6 | 12.0 | 10.5 | 8.5 |

[1] Appeals, litigations, and Spotted Owl Temporary Restraining Order delayed the offer and award of new sales in Regions 5 and 6.
[2] Includes volume offered in FY 1990.

### Roads on the National Forest System

The Forest Development Road System provides access to the National Forest System. These roads are constructed, operated, and maintained to the minimum standard necessary to provide safe, economical, and environmentally acceptable access. Recreationists are the primary users of forest development roads. As shown in the figure, FY 1991 continued the downward trend in new road construction and a slight decrease in reconstruction miles.

**Road Accomplishment Trends—Construction and Reconstruction**




Note: Trend lines based on averages from 1983 -1991.

## STATE AND PRIVATE FORESTRY

State and Private Forestry programs offer technical and financial forestry assistance to State and private forest landowners. This aids in the protection and management of the more than 600 million acres of forested land in the United States outside the boundaries of the National Forest System.

### Cooperative Forestry

The Food, Agriculture, Conservation, and Trade Act (1990 farm bill) includes significant responsibilities in forestry for the Forest Service. The Forestry Title of the act contains a nationwide, multiyear program of tree planting and forest improvement, the America the Beautiful Act of 1990. The act is to be implemented through the Forest Stewardship, Stewardship Incentive, and Urban and Community Forestry Assistance Programs of the same Title.

The Forest Stewardship Program, in FY 1991, provided assistance in developing 12,019 stewardship plans for 1,573,444 acres. The Urban and Community Forestry Program, in FY 1991, provided technical and financial assistance for tree planting and maintenance through State Foresters to 11,607 communities.

### Emergency Reforestation

In FY 1991, $2,984,000 was allocated to South Carolina to assist reforestation efforts to repair the damage caused by Hurricane Hugo. Approximately 7,048 acres have been prescribed for reforestation, 1,151 landowners have received assistance, and 712 management plans were prepared.

### Seedlings and Nurseries

This cooperative Federal-State program provides high-quality planting stock for reforestation. In FY 1991, an estimated 1.7 billion tree seedlings were produced and planted on about 2.5 million acres nationwide.

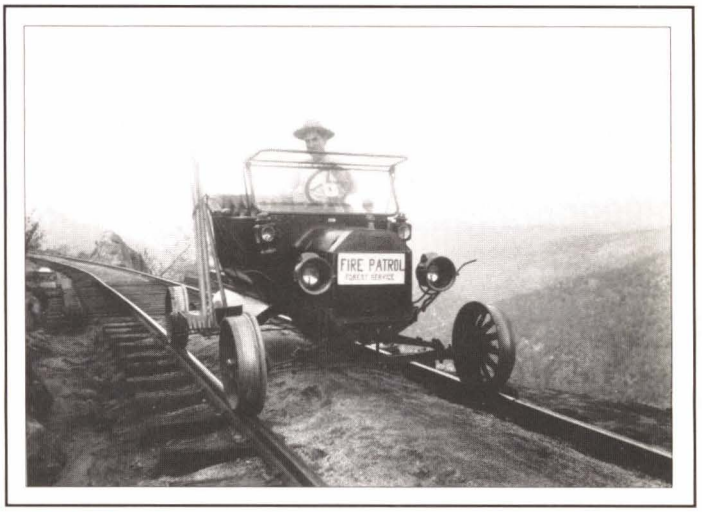
The Forestry Incentives Program and the forestry component of the Agricultural Conservation Program are important cost-share programs promoting forestry on nonindustrial private forest lands. In FY 1991, reforestation under the two programs totaled 150,000 acres and 110,000 acres, respectively.

### Cooperative Watershed

The Forest Service cooperates with the USDA Soil Conservation Service in several programs authorized by the Watershed Protection and Flood Prevention Act. In FY 1991, the Forest Service provided expertise and information in 51 river basin studies and 30 watershed planning projects to help find solutions to local problems.

### Forest Pest Management

The Forest Service provides protection services from insects and diseases on both Federal and non-Federal lands. The direct value of timber saved by pest management prevention and suppression project activities on all lands in FY 1991 is estimated at $61 million. Pest management projects also helped protect recreation areas, wildlife habitats, and watersheds.




*In 1912, a forest ranger and his 20-horsepower rail-adapted Ford roadster patrol for fires on the Sierra National Forest in California.*
F.S. Photo

The Forest Service provided technical and funding assistance to State forestry organizations in detecting and evaluating vegetation damage or pest populations on 515 million acres of State and private lands. The Forest Service also surveyed 45 million acres of Federal lands other than National Forest System lands.

### Cooperative Fire Protection

Cooperative fire protection encompasses several programs that provide organizational assistance, training, equipment, fire prevention materials, and financial assistance to State and local fire protection organizations. In FY 1991, the States used $11 million in Federal grant funds for a variety of programs to improve firefighting resource efficiency and availability for assignments throughout the Nation.

## INTERNATIONAL FORESTRY

On June 26, 1991, the Secretary of Agriculture announced the creation of a Forest Service Office of International Forestry. The International Forestry Office, to be led by a new Deputy Chief, was authorized by Title XXIV, the Global Climate Change Prevention Act of 1990. A delegation from the United States, headed by the Deputy Chief for International Forestry, participated in the 10th World Forestry Congress in Paris, September 17-26,1991.

In March 1991, the Forest Service, the USDA Office of International Cooperation and Development, and the Peace Corps signed a 10-year, $45 million agreement with the U.S. Agency for International Development to promote the contribution of natural resources to sustainable development worldwide.

# USDA - FOREST SERVICE

The Forest Service, U.S. Department of Agriculture, provides leadership in the management, protection, and use of the Nation's forests and rangelands. The agency operates under the concept of multiple use, providing sustained yields of renewable resources such as water, forage, wildlife, wood, and recreation. The Forest Service is committed to the preservation of wilderness, biodiversity, and landscape beauty as well as the protection of the basic resources of soil, water, and air quality in its management of these lands.

The Forest Service is responsible for the 191-million-acre National Forest System, with its 156 national forests and 20 grasslands in 42 States and Puerto Rico. In addition, the agency works with State land management organizations to help private landowners apply good natural resource management practices on their lands. The International Forestry arm of the Forest Service enables the agency to share its technical expertise and managerial skills with other nations. The Research arm of the Forest Service conducts extensive research to enhance and protect productivity on all of America's forests and rangelands, with special attention to long-term natural resource issues of national and international scope.

The management of the National Forest System is guided by the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974, as amended, and by the National Forest Management Act (NFMA) of 1976. Together, these laws encourage foresight in the use of the Nation's natural resources, and establish a long-range planning process for the management of the National Forest System. RPA focuses on the national long-range direction for natural resource conservation, while NFMA provides guidance on integrating the national direction with the planning and management for the National Forest System units.

## SELECTED FY 1991 STATISTICS

| | |
|---|---|
| **National Forest System** | **191 Million Acres** |
| **National Forest System Lands Burned** | **98 Thousand Acres** |
| **Insect and Disease Suppression** | **1.5 Million Acres** |
| **Wilderness** | **33.6 Million Acres** |
| **Watershed Improvements** | **35,091 Acres** |
| **Wildlife and Fish Habitat Improvements** | **486,538 Acres** |
| **Reforestation** | **503 Thousand Acres** |
| **Recreation Use** | **279 Million Visitor Days** |
| **Trail System** | **116,585 Miles** |
| **National Scenic Byways** | **4,900 Miles** |
| **National Wild and Scenic Rivers System** | **3,417 Miles** |
| **Livestock Grazing** | **9.5 Million Animal Unit Months** |
| **Grazing Allotments Administered** | **10 Thousand Permits** |
| **Mineral Cases Processed** | **25,349** |
| **Timber Sold** | **6.4 Billion Board Feet** |
| **Timber Harvested** | **8.5 Billion Board Feet** |
| **Road System** | **368 Thousand Miles** |
| **Woodland Owners Assisted** | **153,090** |
| **Research Publications** | **2,404** |
| **Permanent Full-time Employees** | **34,861** |
| **Human Resource Programs** | **134,620 Persons Served** |
| **Expenditures** | **$3.42 Billion** |
| **Receipts** | **$1.44 Billion** |

May 1992